



# | Moving Block

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Head of AR

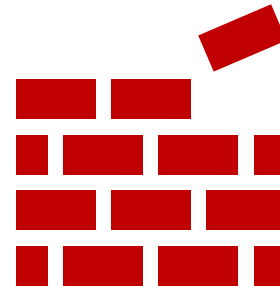
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# Moving Block

## Method of Operation vs Set of Functionality

- Typically, people think
  - Moving Block equals MB Method of Operation
  - MB Method of Operation equals attempt to increase throughput
- Moving Block is also a set of functional blocks
  - Usage of blocks is flexible
  - Not limited to MB Method of Operation

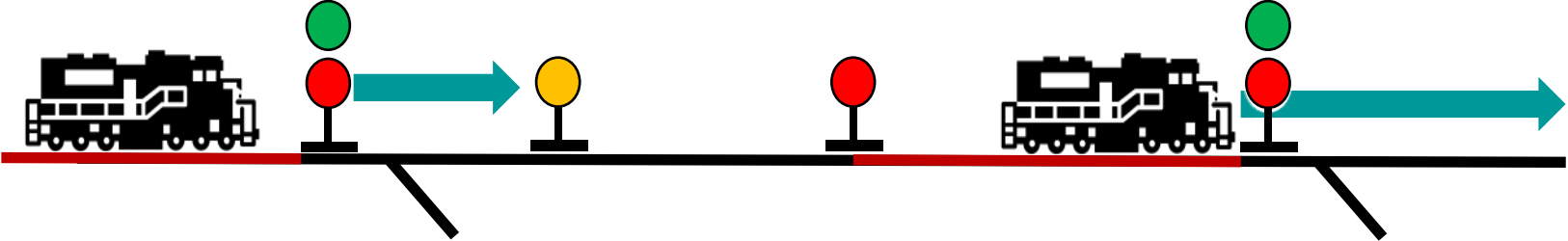


# Moving Block

Method of Operation

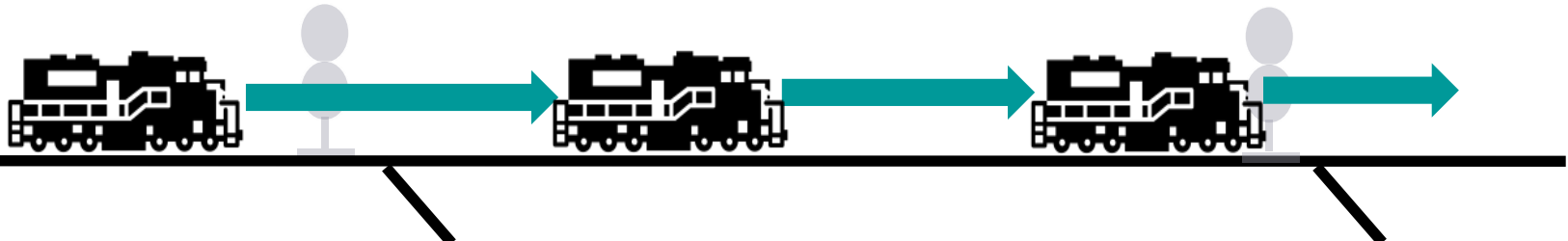
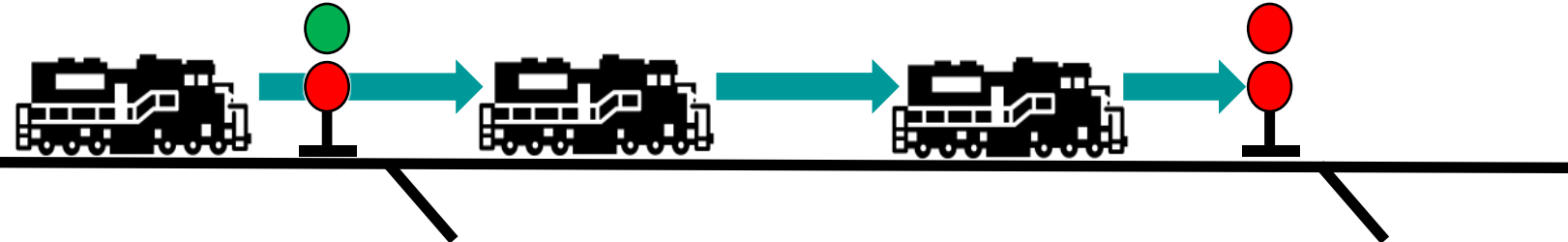


# Fixed Block to Moving Block Method of Operation



**Fixed Block**  
Intermediate signals, switch locking,  
IXL protection

**Quasi MB**  
Replaces intermediate signals, Home  
signals exist, Switch locking / **protection**  
in IXL

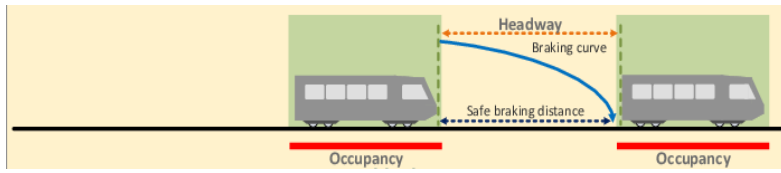


**Full MB**  
Replaces intermediate and home signals,  
Switch locking / **protection** in office

# Moving Block

## Method of Operation - Benefits

### Moving Block



- Train movements determined by network traffic
- Flexible system allows network to adjust with speed and train length
- No longer requires all trackside equipment
- Increased overall system safety level



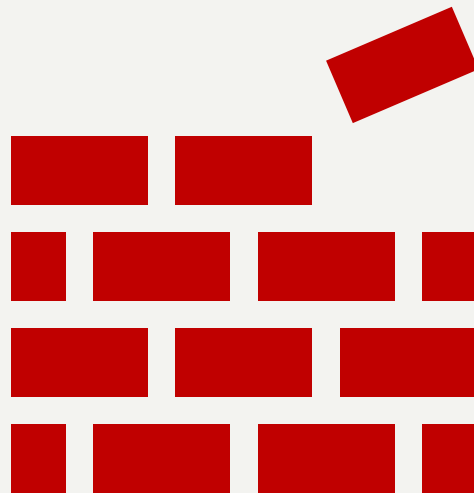
### Benefits



- Overall network velocity improvements
- Optimized network operations center
- Reduction in capital and operating costs
- Reduction in train headways
- Increased recovery buffer

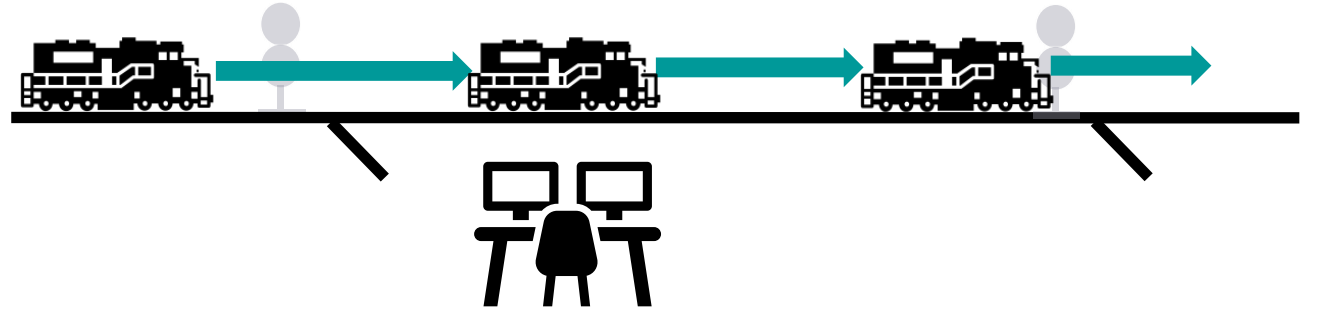
# Moving Block

Functional Blocks



# Moving Block

## Functional Blocks



- Vital Position Reports
- Vital management and delivery of Electronic Mandatory Directives
- Vital overlap checking
- Automatic MA extension
- Automatic MA roll-up



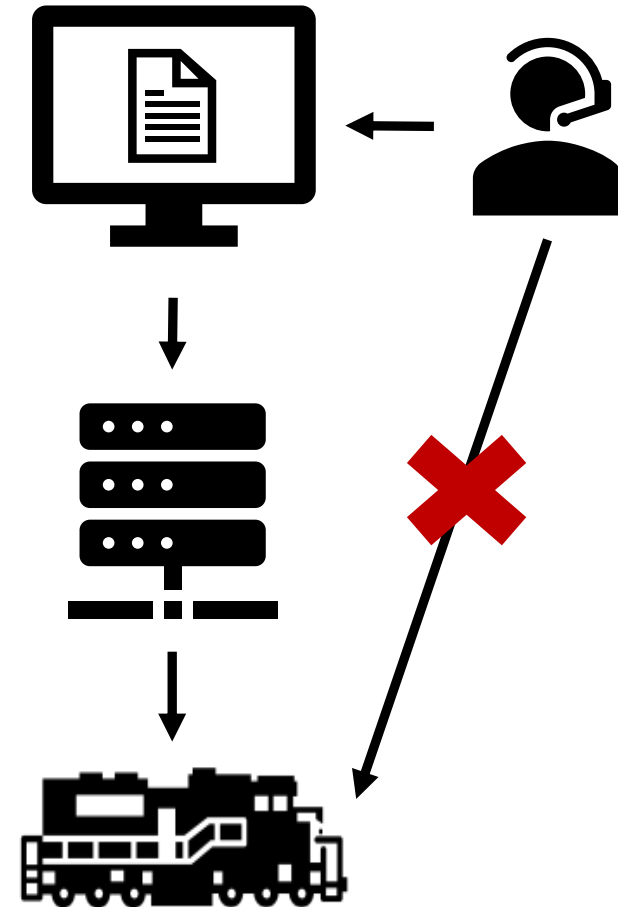
- Safety shift from “procedures and people” to “System”
- Dispatching agnostic to underlying method of operation and territory
- Safe train separation with office logic
- Fewer manual interactions and optimized operations

# Moving Block

## Functional Blocks Use Cases

### Omitting Read / Repeats safely

- Read / Repeats is “safety through process”
- Dispatchers perform 100+ Read / Repeats every day (depending on territory)
- Read / Repeat takes in average 2 minutes (depending on authority and territory)
- Time can be saved while increasing safety by omitting Read / Repeat safely



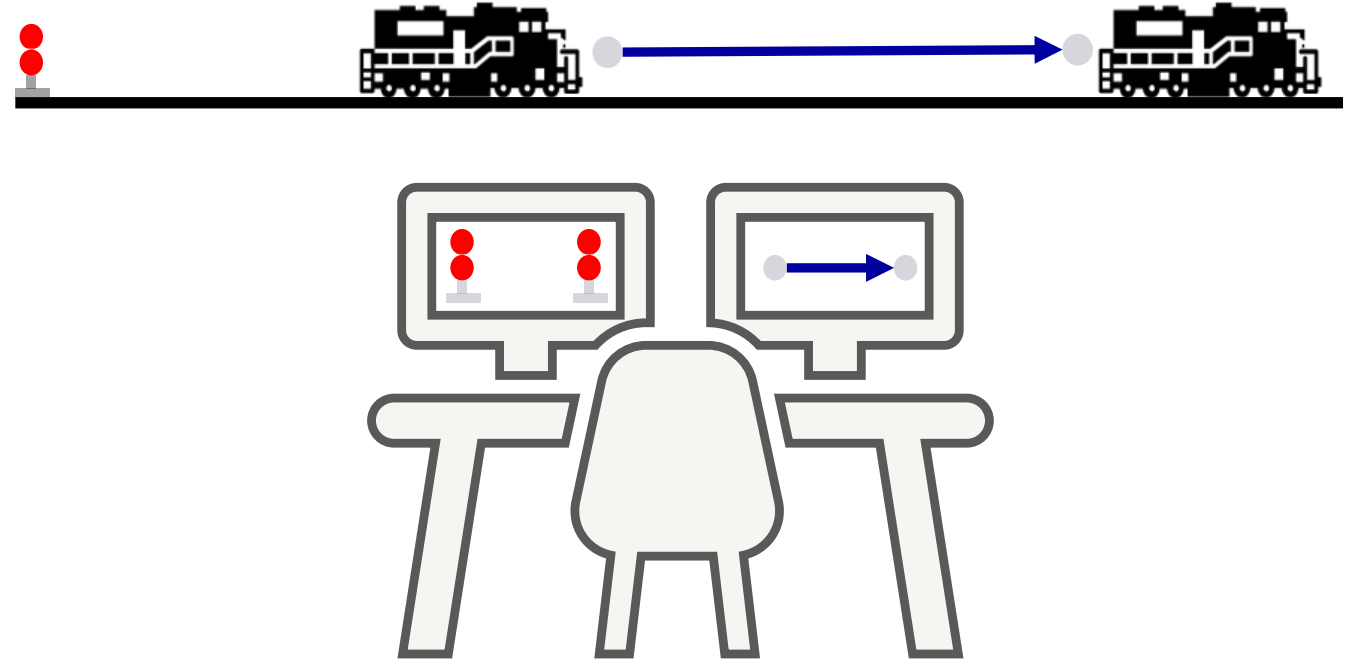


# Moving Block

## Functional Blocks Use Cases

### Harmonized Method of Operations

- Existing Back-offices have some type of Automatic Route Setting
- Automated route setting executes planned routes automatically
- Notion of routes does typically not exist in dark territory
- Modelling virtual routes allows automatic execution to be transparent and makes integration with existing systems easier

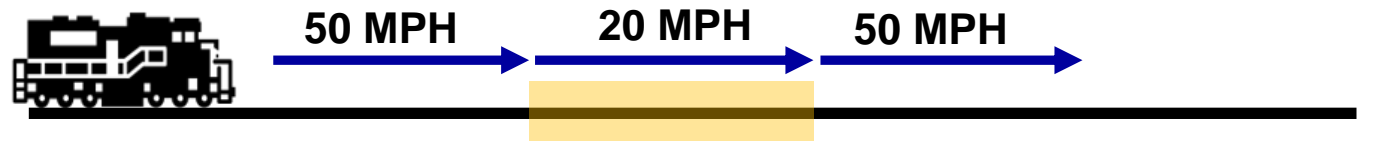
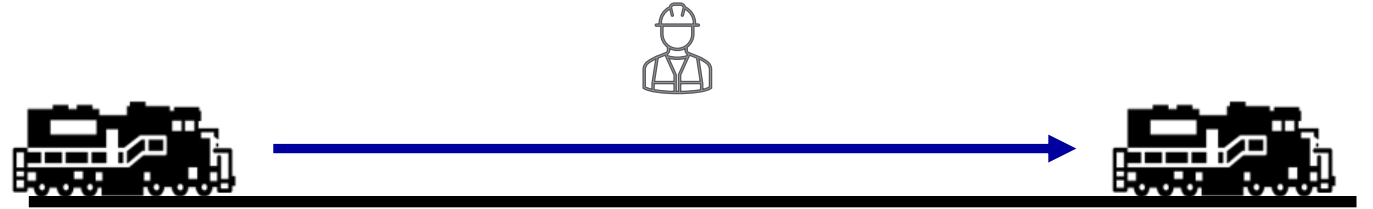


# Moving Block

## Functional Blocks Use Cases

### Reacting to dynamic changes

- Short-notice track time, weather related restrictions etc. require actions
- Dispatchers need to react to different dynamic events while keeping trains moving
- Allowing the system to react to events automatically and safely can optimize workflows



# | Contact

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